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Drug Eluting Stent (DES) in the treatment of Peripheral Arterial Disease in lower limbs in Colombia. **METHODS:** An analytical decision model was considered with Target Lesion Restenosis (TLR) avoided and total cost at the end of a two year period as endpoints. An Excel model was developed. For the effectiveness data a Meta-analysis was done and second revascularization procedures probabilities were taken with KOL criterion. A public payer perspective was assumed. Total costs were taken from reimbursement values charged to payers. Because effectiveness and cost were taken as unique values at the end of the two years with no cycles, discount rate was no applied. The sensitivity Univariate analysis was done for DEB vs. PTA. For the Probabilistic Sensitivity Analysis a Monte Carlo Simulation with 1000 iterations was done. **RESULTS:** TLR Avoided probability with DEB was 0.86 vs. 0.60, 0.72 and 0.81 for PTA, BMS and DES respectively. DEB total cost was US$4.441 vs. US$3.893 for PTA, US$4.826 for BMS and US$5.599 for DES. Respect to PTA, DEB ICER was US$2.142, US$7.776 for BMS and US$8.204 for DES. In univariate sensitivity the DEB ICER was especially sensible to total costs for both therapies and for the TLR probability for PTA. The Willingness-To-Pay (WTP) acceptability curves show that DEB, compared to other therapies, had a higher probability to be accepted for all the WTP values above US$2.500, reaching a probability of 94% for US$10.000 WTP value **CONCLUSIONS:** DEB have better cost-effectiveness ratio than PTA, with an ICER of US$2.142 and was dominant over BMS and DES. The univariate sensitivity analysis shows the ICER of DEB vs. PTA was especially sensible to the total costs of the therapies and the effectiveness of PTA.

PCV69

A HYBRID COMPARISON OF COST-EFFECTIVENESS OF TRANSCATHETER AORTIC VALVE REPLACEMENT BETWEEN RANDOMIZED CLINICAL TRIALS AND REAL WORLD PRACTICE IN TREATING PATIENTS WITH SEVERE AORTIC STENOSIS

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OBJECTIVES: To fill the knowledge gap of cost-effectiveness result between randomized clinical trials and real world practice in treating patients with medically managed severe aortic stenosis, a hybrid comparison model, using a US societal perspective, was conducted. **METHODS:** The cost-effectiveness of Transcatheter Aortic Valve Replacement (TAVR) was compared to medical management using the 2010 PARTNER trial (Cohort B) result and 2003 Medicare claims analysis (comparison group) on a population with severe aortic stenosis (AS). Survival rate, quality of life , medical resource use and related hospital and physician cost were reported in the PARTNER trial. The Medicare claims analysis presented survival rate and overall cost in treating severe AS, which was converted to 2010 dollars. To calculate quality-adjusted life expectancy, and estimate the incremental cost-effectiveness, QALY for Medicare claims analysis was derived from the control arm of PARTNER trial. The effect of uncertainty in model parameters was examined through one way sensitivity analysis and probabilistic sensitivity analysis (PSA). **RESULTS:** Over a two-year time horizon, in the base case the cost of TAVR was higher than the comparison group by $65,813. An additional 0.5 quality-adjusted life years was gained in the TAVR group. The resultant incremental cost-effectiveness ratio (ICER) was $ 132,155 per QALY gained for patients treated with TAVR vs. managed medically. Given $150,000 as the acceptability threshold for ICER willingness to pay, 66.4% iterations in PSA were favorable toward TAVR. **CONCLUSIONS:** In real world practice where it is difficult to qualify patients with rigid criteria, our result shows that TAVR fell at the borderline of the cost effectiveness acceptability threshold. Although this study only considers the first two years of treatment, given the relatively short 2-3 year life expectancy of medically managed patients with severe AS, this result highlights the importance to have a strict guideline for TAVR to ensure its cost effectiveness.

PCV70

COST-EFFECTIVENESS ANALYSIS OF ALTERNATIVE SCREENING AND TREATMENT STRATEGIES FOR FAMILIAL HYPERCHOLESTEROLEMIA IN THE UNITED STATES

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OBJECTIVES: Familial hypercholesterolemia (FH) is a genetic disease that causes build-up of low-density lipoprotein cholesterol and premature coronary heart disease. Taken regularly, statins can lower cholesterol and risk of heart attack and stroke in FH individuals and high cholesterol individuals with no FH gene mutations. However, the US FH diagnosis rate is only 20% of actual cases, and patients generally have suboptimal statin adherence. Given cost-effectiveness studies evaluating genetic screening for FH in Europe, similar screening strategies with adherence programs could be cost-effective in the US. The objective of this study is to conduct a cost-effectiveness analysis of lipid cascade screening, genetic cascade screening, and lipid cascade screening plus statin adherence program for FH diagnosis and treatment in terms of incremental cost-effectiveness ratios (ICERs) between strategies. **METHODS:** A Markov model with transition probabilities derived from published literature was used to model screening strategies. Because the model assumes an initial cohort of high cholesterol adults with a family history of FH, lipid cascade screening is the base case. US costs and quality of life data were obtained from published literature and public data. **RESULTS:** Genetic cascade screening is dominated by base case screening, with an ICER of $532,222/QALY between the two. While the lifetime costs of statin adherence programs exceed the onetime costs of genetic testing, lipid cascade screening with statin adherence program is the most cost-effective strategy with an ICER of $10,705/QALY compared to the base case. At a US willingness-to-pay of $150,000/QALY, net monetary benefit analysis suggests that genetic cascade screening will only produce non-negative benefits at screening costs of less than $1,700 per diagnosed case. **CONCLUSIONS:** Genetic cascade screening for FH is not cost-effective in a US setting. The addition of statin adherence programs is cost-effective, but lack of US FH studies suggests a need for further analyses.

PCV71

COMPARATIVE EFFECTIVENESS AND COST-EFFECTIVENESS OF CAROTID ARTERY STENT WITH EMBOLI PROTECTION DEVICE VERSUS CAROTID ENDARTERECTOMY: A RETROSPECTIVE COHORT STUDY USING NHI CLAIMS DATABASE IN TAIWAN

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OBJECTIVES: The objectives were to compare the effectiveness and cost-effectivness of carotid artery stent with emboli protection device (CAS+EPD) and carotid endarterectomy (CEA). **METHODS:** A retrospective cohort during 2001-2012 was built using NHI database. Outcomes events cumulative incidence rate of death, stroke, death or stroke, and MI occurring 30 days peri-procedure, 1 year and 8 years after procedure, were analyzed as comparative effectiveness. The transitional probabilities of various outcomes were adopted from comparative effectiveness results by Weibull distribution. Kaplan Meier sample average method was applied for medical cost. A Markov model was built to simulate the lifetime QALYs and medical costs estimation. **RESULTS:** A total of 3,359 and 543 patients were included in CAS+EPD and CEA groups. In comparative effectiveness, the incidences of safety outcomes in stroke (2.2% vs. 2.0%), death (0.7% vs. 1.5%), and death or stroke (2.7% vs. 2.9%) did not differ significantly between CAS+EPD and CEA within 30 days post procedure. A one-year follow-up revealed that CEA was associated with higher risks of stroke (hazard ratio: 2.72, 95%CI: 1.61-4.61) and death or stroke (HR: 2.00, 95%CI: 1.33-3.02) than CAS+EPD. Long term follow-up results demonstrated CEA had a higher risk in stroke (HR: 1.61, 95%CI: 1.09-2.37) only. The hospitalization cost were $5,600±2,500 in CAS+EPD and $ 4,800±6,100 in CEA, the total medical expense during the first year were $11,600 and $10,000, respectively. Life-long medical cost estimation revealed $28,700 for CAS+EPD and $31,300 for CEA. Cost-effectiveness analysis showed CAS+EPD had 0.59 life years (LYs) gained better than CEA (9.24 LYs vs. 8.65 LYs). The QALYs for CAS+EPD and CEA were 8.12 and 6.99, respectively. Overall, the results demonstrated CAS+EPD to be the dominant strategy. **CONCLUSIONS:** Retrospective cohort database analysis demonstrated CAS+EPD was more effective and also less expensive than CEA. Under current NHI reimbursement, the CAS+EPD was a cost-effective strategy.

PCV72

COST-EFFECTIVENESS OF DABIGATRAN FOR STROKE PREVENTION IN ATRIAL FIBRILLATION IN CHINA

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OBJECTIVES: Warfarin has been the standard oral anticoagulant for stroke prevention in patients with atrial fibrillation (AF). However, it has an increased risk of bleeding and a narrow therapeutic range which required frequent monitoring of the International Normalized Ratio (INR) and dose adjustments. Dabigatran, a novel oral anticoagulant, has demonstrated to be at least as effective and as safe as warfarin, and shown to be cost-effective in Canada and UK. Recently, dabigatran received approval in China. In this study, we aim to assess the potential cost-effectiveness of dabigatran for the prevention of stroke and systemic embolism among patients with AF as compared to warfarin as a first-line therapy, from the payer perspective in China. **METHODS:** An individual level simulation model was developed to simulate the clinical events and outcomes under different treatment pathways over a patient's remaining lifetime. The model explicitly incorporated an INR control component to account for heterogeneous use of warfarin in different populations and in settings. Input data were derived from the published literature, NICE STA reports, and expert inputs. Patient baseline profiles were based on China Registry of AF (CRAF), a multicenter, cross-sectional study of 3551 AF patients in mainland China. **RESULTS:** Comparing to warfarin first-line use among patients eligible for anticoagulants, dabigatran was associated with 0.40 fewer ischemic stroke, 0.11 fewer systemic embolism, 0.19 fewer hemorrhagic stroke, 0.30 fewer intracranial hemorrhage, 1.33 more extra-cranial hemorrhage and 0.38 more acute myocardial infarction, per 100 patient-year. Predicted incremental costs and QALYs are US$ 13527.88 and 0.23, respectively, resulting an ICER of US$ 59546.08 per QALY gained. The result was sensitive to the cost of dabigatran cost, warfarin-related cost, and INR control assumptions. **CONCLUSIONS:** The cost-effectiveness of new anticoagulation therapy should be considered when making treatment recommendations. Further economic evaluation of appropriate use of dabigatran in China setting is needed.

PCV73

COST EFFECTIVENESS OF MINIMALLY INVASIVE CARDIAC SURGERY VERSUS CONVENTIONAL APPROACH IN CARDIAC VALVE SURGICAL REPLACEMENT IN COLOMBIA

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OBJECTIVES: Cost-Effectiveness analysis of Minimally Invasive Cardiac Surgery (MICS) vs. Conventional Approach (CA) for surgical valve replacement in Colombia. **METHODS:** An analytical decision model was considered with any immediate severe complication avoided and total cost at the end of the hospitalization as the endpoint results. A deterministic and probabilistic Excel model was developed. Complications rates and costs were taking from 240 registries in a period of time between 01-2010 and 10-2012, from Cardiovascular Clinic Cardiovid at Medellin Colombia. Colombian Health System payer perspective was assumed and reimbursement prices were considered as the final costs for the procedures, including those until hospital discharge. Because only one cycle was considered there was no need to apply a discount rate. The deterministic ICER calculations analysis was done including a univariate sensitivity analysis. For the Probabilistic Sensitivity Analysis a Monte Carlo Simulation with 1000 iterations was done. **RESULTS:** The complications avoided probability with MICS was 0.73 compared to 0.57 with CA. The total cost was US$14.330 for MICS compared to US$ 13.006 for CA with an ICER of US$ 8.326

for any avoided severe complication. In the univariate sensitivity analysis the ICER result was especially sensible to CA total cost and in a lesser extension to MICS total costs. The probabilistic sensitivity analysis shows the robustness of the results. The 37.8% of the results were cost saving respect to CA. The Willingness To Pay (WTP) acceptability curves show that MICS compared to CA, had a higher probability to be accepted for the all the WTP values above US$16.000. **CONCLUSIONS:** MICS shows a better cost-effectiveness ratio than CA, with an ICER of US$8.326. The univariate sensitivity analysis shows the ICER result was especially sensible to CA total costs. The probabilistic analysis shows that in 36.8% of Monte Carlo simulations, MICS was cost saving respect to CA.

PCV74

ECONOMIC EVALUATION OF CLOPIDOGREL VERSUS TICAGRELOR, IN PATIENTS WITH ACUTE CORONARY SYNDROME, FROM THE PERSPECTIVE OF THE MEXICAN PUBLIC HEALTH CARE SYSTEM

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OBJECTIVES: To compare clopidogrel/aspirin with ticagrelor/aspirin in terms of costs and effects, from the perspective of the Mexican public health care system. **METHODS:** A markov model was designed to take into account all relevant outcomes reported in the PLATO study, allowing the evaluation of two different cohorts of patients according to their renal function (<60 mL/min creatinine clearance and ≥60 mL/min). The effectiveness measures analyzed were life years gained and events (bleeding, stroke and MI) averted. Annual cost of antiplatelet therapy was estimated with unit prices of the IMSS, while costs of diseases were taken from DRGs of the IMSS. 5 years horizon was used, so future costs were discounted at 5% discount rate. Probabilistic sensitivity analysis was performed with 1000 iterations via Monte Carlo simulations. **RESULTS:** Total expected costs per patient were US$17,121 and US$17,697 respectively for both cohorts of clopidogrel while the costs for the two cohorts of ticagrelor were US$18,430 and US$18,261 respectively. The treatment with clopidogrel resulted in less outcomes per patient (bleeding: 0.67 and 0.55; stroke: 0.09 and 0.083; MI: 0.51 and 0.49) than ticagrelor (bleeding: 0.76 and 0.59; stroke: 0.1 and 0.085; MI: 0.53 and 0.5); therefore the pharmacoeconomic profile of clopidogrel in comparison with ticagrelor is more favorable in the current study. Sensitivity analysis showed that clopidogrel has a higher probability of being a cost-saving option versus ticagrelor for both cohorts of patients. **CONCLUSIONS:** The economic evaluation of clopidogrel/aspirin versus ticagrelor/aspirin, taking into account relevant outcomes as well as primary endpoints of clinical trials, has proven that cost-effectiveness results may vary depending of the renal function of patients, thus giving a broader picture of the problem to decision makers.

PCV75

PHARMACOECONOMIC ANALYSIS OF DABIGATRAN IN PATIENTS WITH ATRIAL FIBRILLATION: COMPARISON WITH RIVAROXABAN OR APIXABAN

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OBJECTIVES: To compare the incremental cost-effectiveness ratio (ICER) of the reversible direct thrombin inhibitor dabigatran 150mg BID with those of the Xa factor inhibitors rivaroxaban and apixaban from the Mexican public health institution perspective. **METHODS:** The ICER´s were calculated using a Markov model with a 10-year time horizon for patients over 65 and diagnosed with atrial fibrillation. Each treatment arm started with a cohort of 10,000 patients. The clinical events tracked were incorporated: ischemic stroke, systematic embolism, transient ischemic stroke, hemorrhagic stroke, intracranial hemorrhage, extracranial hemorrhage, acute myocardial infarction, minor bleed and death. Transition probabilities were calculated based on indirect comparisons of published phase III clinical trials. Costs are adapted to the Mexican public health institution perspective. Costs were calculated using published literature, and national costs taken from pharmaceutical companies and public health institutions. Cost-effectiveness was based on the 1GDP per capita threshold established by the National Health Council in Mexico. Costs and outcomes were discounted at a 5% annual-rate. Deterministic and probabilistic sensitivity analyses were performed to evaluate the uncertainty of the variables. **RESULTS:** Dabigatran was found to be dominant when compared with rivaroxaban and apixaban. A reduction on risk for cardiovascular complications was the key advantage of dabigatran. Dabigatran was also more effective when compared with warfarin (69,435 vs. 68,373 life years gained) although more costly (USD$192.76 vs USD$190.73 million dollars). The ICER was USD $1,910.43 per life year which is considered highly cost-effectiveness. The Incremental Cost-Utility Ratio per QALY gained was USD$1,549.00. **CONCLUSIONS:** The ICER and ICUR of Dabigatran are well below 1GDP (USD$ 10,483.26) per capita versus warfarina. Dabigatran was found to be dominant in comparison with all other treatments. As such, dabigatran can be considered a very cost-effective intervention for the Mexican population over 65 with atrial fibrillation.

PCV76

ECONOMIC ASSESSMENT OF THE USE OF TRANSCATHETER AORTIC VALVE REPLACEMENT IN INOPERABLE STENOTIC PATIENTS IN MEXICO

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OBJECTIVES: To identify the incremental cost-effectiveness ratio (ICER) for the treatment of inoperable patients with severe symptomatic aortic valve stenosis (SAS) using transcatheter aortic valve replacement (TAVR), compared to the standard of care (SoC), from the Mexican public payer perspective. **METHODS:** A previously published decision analytical model was adapted to the Mexican setting to predict clinical endpoints and costs over 10 years and discounted at 5%. Mexican epidemiological data were applied. We performed a systematic review of published clinical trials to obtain the necessary clinical information to evaluate the impact of TAVR and SoC in the short and long term evolution of patients. Direct public health care costs were estimated from published literature and governmental databases. Resource utilization patterns were derived from Mexican Clinical Practice Guidelines. The ICER was computed as incremental cost per life-year gained (LYG). Probabilistic and deterministic sensitivity analyses were conducted to estimate the confidence around the results. **RESULTS:** Over the time horizon, compared to SoC, TAVR produced an additional 1.61 Life years at an additional cost to the health care sector of $777,414 MXP. The ICER was thus $483,022 MXP (35,779 USD) per LYG. The sensitivity analysis identified time horizon, discount rate on health benefits, probability of leaving intensive care and time of stay in intensive care, as the variables with the most impact. The model was insensitive to changes in the TAVR acquisition cost, device related complication rates and the probability/cost of additional pacing. **CONCLUSIONS:** In comparison with SoC, TAVR produces an increase in life expectancy in patients with SAS that are ineligible for cardiac surgery, at an ICER below an internationally accepted cost-effectiveness threshold value. These results, and the improvements in health and quality of life observed in the clinical studies, identify TAVR as both a clinically effective and cost-effective therapy for Mexican patients.

PCV77

COST EFFECTIVENESS OF APIXABAN, DABIGATRAN RIVAROXABAN AND WARFARIN FOR ATRIAL FIBRILLATION IN GUATEMALA

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OBJECTIVES: Atrial Fibrillation (AF) affects 1–2% of the population, and this figure is likely to increase in the next 50 years. AF is associated with increased rates of death, stroke and other thromboembolic events, heart failure and hospitalizations, degraded quality of life and reduced exercise capacity. It is suggested that patients with AF should be stratified for the risk of stroke and bleedings and that most should receive antithrombotic therapy. The aim of this study was to assess the cost-effectiveness (CE) of Apixaban against other anticoagulation therapies for prevention on non-valvular atrial fibrillation (NVAF), from the private health care perspective. **METHODS:** A simulated cohort of 1000 patients with NVAF entered a decision-tree model to compare costs and effectiveness of Warfarin (5 mg/24 hours), Apixaban (5 mg/12 hours), Dabigatran (110 mg/12 hours and 150 mg/12 hours), and Rivaroxaban (20 mg/24 hours). Effectiveness measures were: stroke, bleeding, myocardial infarction (MI) rates and deaths. Local costs were gathered from Guatemala's official databases (US$, 2013) and only direct medical costs were considered. The model used a lifetime horizon with a 5% discount. **RESULTS:** Apixaban was the only treatment that consistently prevented all four considered diseases: 3 MIs, 4 strokes, 85 bleedings and 1 SE avoided when compared to Warfarin. Overall costs were US$33708.34 for warfarin, US$24538.68 for Apixaban, US$24757.57 for Dabigatran 110 mg, US$24198.23 for Dabigatran 150 mg, and US$24252.46 for Rivaroxaban. In terms of QALY's, Apixaban earned the highest amount with 5.740, followed by Rivaroxaban, Dabigatran 150 mg, Dabigatran 110 mg and Warfarin. In the CE incremental analysis, Apixaban was a cost-effective option. Apixaban obtained the highest probability of being cost-effective (45%) with a 3 GPB per capita in Guatemala. **CONCLUSIONS:** Apixaban is a Cost-Effective option for the Guatemala's Private Health System.

PCV78

THE COST–EFFECTIVENESS OF RIVAROXABAN FOR THE PREVENTION OF CARDIOVASCULAR (CV) EVENTS IN PATIENTS WITH ACUTE CORONARY SYNDROME (ACS) IN TURKEY

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OBJECTIVES: To evaluate the cost-effectiveness of rivaroxaban in addition to the standard of care (SoC) therapy in the prevention of the risk of CV events and bleeding in patients with a recent ACS compared to the placebo in addition to the SoC. **METHODS:** A Markov model demonstrating the progression of ACS patients from healthy state towards atherosclerotic and bleeding events and to death was adapted to the Turkish setting. The cycle length was set as six-months. The analysis was undertaken from a payer perspective. Event rates and treatment effects were derived from the ATLAS-2-TIMI clinical trial. 61Utility values for events were based on international literature. Costs of each health state included year 2013 local costs of medications, monitoring and events (TL/ USD currency rate was set at 1.70; mid 2013). Incremental cost effectiveness ratios (ICER) per life year (LY) and quality-adjusted LY (QALY) gained were calculated. One-way sensitivity analyses were conducted to test the robustness of the model. The time horizon was life time period. Discount rate was set at 3.5% for economic and clinical inputs. Willingness-to-pay (WTP) threshold was set as twice the local gross domestic product per capita (20,888USD). **RESULTS:** The total cost of rivaroxaban-treated patients was 578USD higher compared to SoC. Additional drug costs (676USD) caused by rivaroxaban was somewhat offset by reduced costs of and events and interventions (98USD). Moreover, rivaroxaban was associated with increments of 0.102LYs and 0.088QALY leading to an ICER of 5,691USD/LY gained and 6,590USD/QALY gained. Sensitivity analyses showed that the cost-effectiveness results are fairly insensitive to most inputs. **CONCLUSIONS:** Rivaroxaban, given its cost-saving effects on consequent CV events, improvement in LYs and QALYs, and ICER values below WTP threshold, is suggested to be a cost-effective alternative for the prevention of CV events in ACS.